

What is Claimed is:

2           1.     An electrical connector, comprising:  
4               a dielectric housing having a plurality of substantially open receptacles arranged  
6               in an array which is suitable for an electrical connector, each said receptacle having a  
8               through axis;  
              a plurality of electrically conductive contacts positioned within at least some of  
              said receptacles so as to provide an array of contacts arranged to be suitable for an  
              electrical connector;  
              a plurality of retention members within the receptacle, at least one of said  
10           retention members engaging at least one of said contacts so as to impart an ungapped  
              condition to the connector at the location of the retention member within the housing; and  
12           said ungapped condition of the connector substantially prevents passage of liquid  
              through the open receptacles having said retention members therewithin.

2           2.     The electrical connector in accordance with claim 1, wherein said retention  
4           member has an opening therethrough, and said electrically conductive contact is  
              positioned through said retention member opening and substantially fills said opening.

2           3.     The electrical connector in accordance with claim 2, wherein said  
4           receptacle of the housing has a stop surface within the receptacle, and wherein said  
A           retention member is between said stop surface and a portion of said electrically conductive  
              contact.

2 4. The electrical connector in accordance with claim 1, wherein said  
electrically conductive contact has a first portion and a generally opposing second  
portion, a demarcation between said first and second portions of the contact being  
4 generally at said retention member, said first and second portions being at least partially  
within said housing, and said retention member is in contact with the respective first and  
6 second portions within the housing to thereby contribute to said ungapped condition.

2 5. The electrical connector according to claim 4, wherein said first portion  
of the electrically conductive contact generally lies along said through axis, while said  
second portion of the contact is at an acute angle relative to said through axis.

2 6. The electrical connector according to claim 1, wherein said ungapped  
condition imparts compliant and stable mount characteristics to said contacts.

2 7. The electrical connector according to claim 1, wherein said array of  
contacts is in a 1 mm grid.

2 8. The electrical connector according to claim 1, wherein said array of  
contacts is in a 0.05 inch grid.

2 ~~Sub B1 9. The electrical connector according to claim 1, wherein said connector has  
a terminal portion which is formed to be offset with respect to said receptacle through  
axis.~~

2 ~~Sub A17 10. The electrical connector according to claim 9, wherein said formed  
terminal portion had been subjected to post-assembly bending for terminal retention.~~

2 11. The electrical connector according to claim 1, wherein said dielectric housing is a unitary member.

2 12. The electrical connector according to claim 1, wherein said dielectric housing includes a plurality of housing component strips.

2 13. The electrical connector according to claim 1, wherein said retention member has an opening therethrough, and a portion of said contact is within and in engagement with said retention member opening.

2 14. The electrical connector according to claim 1, wherein said retention member has an external surface which engages said receptacle.

2 15. The electrical connector according to claim 14, wherein said receptacle has a stop surface, and said retention member external surface abuts said stop surface.

2 16. The electrical connector according to claim 14, wherein said receptacle has an interior surface which is generally parallel to said through axis, and said retention member external surface abuts said receptacle interior surface.

2 17. The electrical connector according to claim 13, wherein said retention member has an external surface which engages said receptacle, and a force fit condition is present between said contact portion and said retention member opening and between  
4 said receptacle and said retention member external surface.

18. The electrical connector according to claim 17, wherein a force fit condition is present between said receptacle interior surface and said retention member external surface.

2 19. The electrical connector according to claim 1, wherein said retention member is resilient.

2 20. The electrical connector according to claim 19, wherein said retention member is compressed within said receptacle.

2 21. The electrical connector according to claim 1, wherein said contact has a land contact surface at one end thereof and a deflective terminal at an opposite end thereof.

22. An electrical connector, comprising:

2 a dielectric housing having a plurality of substantially open receptacles  
arranged in an array which is suitable for an electrical connector, each said receptacle  
4 having a through axis;

a plurality of electrically conductive contacts positioned within at least some of  
6 said receptacles so as to provide an array of contacts arranged to be suitable for an  
electrical connector;

8 a plurality of retention members within the receptacle, at least one of said  
retention members engaging at least one of said contacts so as to impart an ungapped  
10 condition to the connector at the location of the retention member within the housing;

a retention member opening through said retention member, said electrically  
12 conductive contact being positioned through said retention member opening so as to  
substantially fill said opening;

14 said electrically conductive contact has a first portion and a generally opposing  
second portion, a demarcation between said first and second portions of the contact being  
16 generally at said retention member, said first and second portions being at least partially  
within said housing, and said retention member is in contact with the respective first and  
18 second portions within the housing to thereby contribute to said ungapped condition; and

said ungapped condition of the connector substantially prevents passage of  
20 liquid through the open receptacles having said retention members therewithin and  
provides compliant mounting of said contact within said receptacle.

23. The electrical connector in accordance with claim 22, wherein said

2 receptacle of the housing has a stop surface within the receptacle, and wherein said  
~~barrier~~ <sup>retention</sup> member is between said stop surface and a portion of said electrically conductive  
4 contact.

Sub A27

24. The electrical connector according to claim 22, wherein said formed  
2 terminal portion had been subjected to post-assembly bending.

25. The electrical connector according to claim 22, wherein said retention  
2 member has an external surface which engages said receptacle, said receptacle has a stop  
surface, and said retention member external surface abuts said stop surface, said  
4 receptacle has an interior surface which is generally parallel to said through axis, and said  
retention member external surface abuts said receptacle interior surface.

26. The electrical connector according to claim 22, wherein said retention  
2 member is resilient and is compressed within said receptacle.

27. The electrical connector according to claim 22, wherein said contact has  
2 a land contact surface at one end thereof and a deflective terminal at an opposite end  
thereof.

Claims 28-30  
29/2883  
JH

28. A method for manufacturing an electrical connector having an array of contact elements supported by a dielectric housing, comprising:

molding at least one component for providing a dielectric housing having a plurality of substantially open receptacles arranged in an array suitable for use as an electrical connector, each receptacle having a through axis;

forming a plurality of electrically conductive contacts capable of being arranged in accordance with the array of the housing receptacles, each contact having a first engaging portion and a generally opposite second engaging portion;

positioning a retainer member internal of the open receptacle for engagement with the contact when within its open receptacle;

inserting each said contact into said array of housing receptacles such that said first engaging portion and said second engaging portion thereof are exposed at generally opposite ends of said receptacles and such that said retainer member engages the contact and imparts an ungapped condition to the package at the location of the retainer member; and

forming said first engaging portion of the contact after said inserting of the contact, said forming including moving at least a portion of said first engaging portion to passive contact retaining locations which are offset with respect to said through axis of the receptacle;

whereby during subsequent operations on the package, said ungapped condition prevents passage of liquid through the open receptacles.

29. The method in accordance with claim 28, wherein said forming includes ganging said contacts together, and said inserting is carried out while said contacts are thus ganged together.

30. The method in accordance with claim 28, wherein said forming includes bending said first engaging portion downwardly toward said housing.